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SDCS-ER-76-93

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Technical rept.

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(SDCS)

**SPECIAL DATA COLLECTION SYSTEM EVENT REPORT,  
Eastern Kazakh SSR, 20 March 1976.**

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## SDCS EVENT REPORT NO. 93

Eastern Kazakh SSR, 20 March 1976

ACCESSION FOR	
NTIS	White Section <input checked="" type="checkbox"/>
DOC	Ref. Section <input type="checkbox"/>
UNANNOUNCED	<input type="checkbox"/>
JUSTIFICATION	
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This event report contains seismic data from the Special Data Collection System (SDCS), and other sources for the above event. Published epicenter information from seismic observations is:

	"P" Arrival	Origin Time	Lat.	Long.	$m_b$	$M_s$
NORSAR	04:10:55.7	04:03:33	49 N	079 E	4.8	N/A
Hagfors	04:10:45.1	04:03:49	51 N	076 E	5.2	4.5

Using SDCS stations, LASA and NORSAR, the epicenter location and magnitudes become: *Origin time*, *Lat.*, *Long.*, *m sub b*

04:03:39.8, 49.8N, 077.1E, 4.9, 4.1.

The programs used for LASA, NORSAR and ALPA data recovery are presently undergoing modifications. NORSAR short-period data are obtained from their bulletin. Both LASA and NORSAR short-period plots are included in this report; the scaling factors on the NORSAR TAL transmission plot are erroneous. The long-period array beam recovery for these stations will be resumed upon completion of these modifications.

All SDCS stations were operational during this period.

Short-period signals associated with this event were recorded at WH2YK, CPSO, RK-ON, LASA and NORSAR. HN-ME and FN-WV did not record "P" arrivals for this event. All SP channels at HN-ME had polarity reversals; to correct this, mathematical inversions of the data were performed. Horizontal SP channels at all SDCS stations were rotated.

Long-period signals were recorded at CPSO, HN-ME, and FN-WV. WH2YK and RK-ON did not record long-period signals for this event. All LP channels at HN-ME had polarity reversals; to correct this, mathematical inversions of the data were performed. Horizontal LP channels at CPSO, HN-ME, FN-WV and WH2YK were rotated. Horizontal LP channels at RK-ON were not rotated because the operating gain of the LP radial channel was unknown.

Scaling factors on plots are millimicrons at 1 Hz (not corrected for instrument response) with the exception of LASA; scaling factors are indicated on the LASA short-period plot.

# STATION DESCRIPTION

SITE CODE	LOCATION	SITE COORDINATES DEG MN SECS	ELEVATION METERS	INSTRUMENTATION	
				SHORT - PERIOD	LONG - PERIOD
ALPA	Alaska	65 14 00.0 N 147 44 36.0 W	626	None	31300
CPSO	McMinnville, Tennessee	35 35 41.4 N 085 34 13.5 W	574	6480 V 7515 H	SL210 V SL220 H
FN-WV	Franklin, West Virginia	38 32 58.0 N 079 30 47.0 W	910	KS36000	KS36000
LASA	Billings, Montana	46 41 19.0 N 106 13 20.0 W	744	HS10	7505A V 8700C H
HN-ME	Houlton, Maine	46 09 43.0 N 067 59 09.0 W	213	KS36000	KS36000
NORSAR	Kjeller, Norway	60 49 25.4 N 010 49 56.5 E	379	HS10	7505A V 8700C H
RK-ON	Red Lake, Ontario	50 50 20.0 N 093 40 20.0 W	366	18300	SL210 V SL220 H
WH2YK	White Horse, Yukon	60 41 41.0 N 134 58 02.0 W	853	18300	SL210 V SL220 H

# HYPOCENTER DETERMINATION

INPUT FOR EVENT 20 MAR 76  
04:03:33.0 49.000N 79.000E 0KM.

STA.	ARRIVAL	RESIDUALS		DIST.	AZ.
		CALC	REST		
NAO	04 10 55.7	0.1	0.1	37.7	312.8
WH2YK	04 14 32.1	-0.3	-0.2	66.9	16.5
RK-ON	04 15 46.3	-0.2	-0.5	79.5	354.1
LAO	04 16 11.3	1.0	1.1	83.9	2.3
CPSO	04 16 56.6	-0.6	-0.5	93.6	345.9

## 67 HERRIN TRAVEL TIME TABLES

ORIGIN	LAT.	LONG.	DEPTH (KM)	SDV	IT	STA
04:04:02.0	50.787N	76.707E	139. CALC	0.6	6	5
04:03:39.8	49.780N	77.122E	0. REST	0.6	3	5

CALC				REST			
2 . 2				2 . 2			
1	.	0		1	.	0	
0	0. 0	0		0	0. 0	0	
.	.	.	.	.	.	.	.
0	0. 0	0		0	0. 0	0	
0	.	0		0	.	0	
0	0 . 0			0	0 . 0		

CHI2 COVERAGE ELLIPSE; 95 PER CENT CONF..LEVEL, SDV= 0.95  
MAJOR 201.3KM. MINOR 42.8KM. AZ= 0 AREA= 27086 SQ.KM. REST

# DATA SUMMARY

INPUT FOR EVENT 20 MAR 76  
04:03:33.0 49.000N 79.000E 0KM.

STA.	PHASE	ARRIVAL TIME	INST	PER	A/T	MAGNITUDE MB	MS	DIR	DIST
NAO	EP	04 10 55.7	AB	0.6	27.	4.63			37.7
WH2YK	EP	04 14 32.1	SPZ	0.8	22.	5.04			65.9
RK-ON	EP	04 15 46.3	SPZ	0.6	27.	4.89			79.5
HN-ME	LR	04 54 20.0	LPZ	20.0	15.		4.20		79.8
LAO	EP	04 16 11.3	SAB	0.6	12.	4.78			83.9
PN-WV	LR	05 00 19.0	LPZ	21.0	9.		4.03		89.7
CPSO	EP	04 16 56.6	SPZ	0.7	15.	5.01			93.6
CPSO	LR	05 02 17.0	LPZ	20.0	11.		4.13		93.6

ORIGIN	LAT.	LONG.	DEPTH (KM)	MAG	SDV	STA	LPNAG	LPSDV	LPSTA
04:04:02.0	50.787N	76.707E	139. CALC	4.67	0.18	5	4.11	0.1	3
04:03:39.8	49.780N	77.122E	0. REST	4.87	0.17	5	4.12	0.1	3

WH2YK 20 MAR 76

SPZ  
16.20 MU

04:14:32.1



SPR  
9.61 MU



SPT  
11.17 MU



TIME

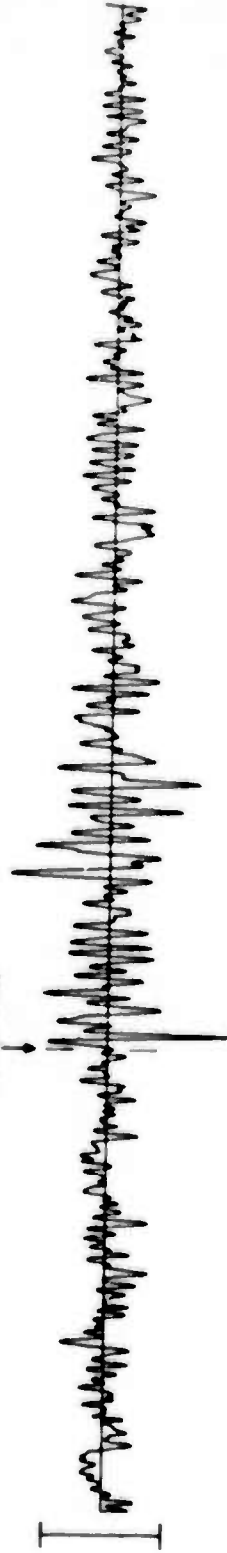




RK-ON 20 MAR 76

SPZ  
29.72 MU

0415463



SPR  
12.27 MU



SPT  
9.36 MU



TIME



HN-ME 20 MAR 76

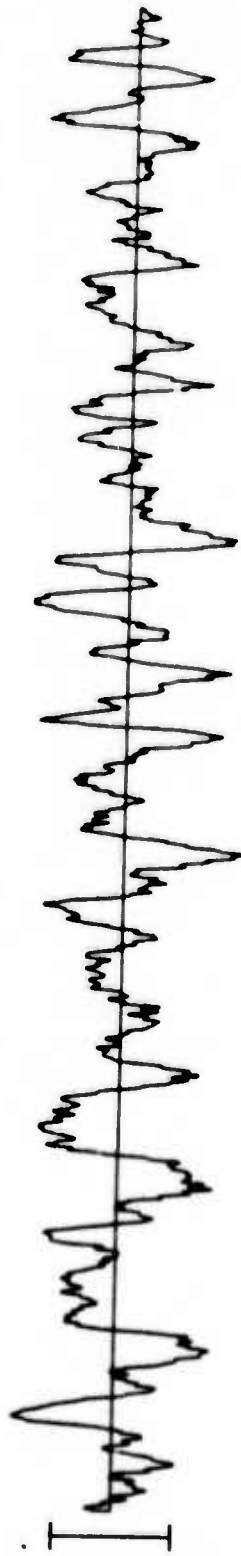
SPZ  
38.01 MU



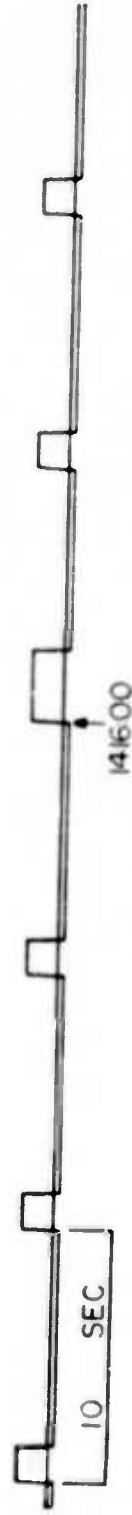
SPR  
31.89 MU



SPT  
26.78 MU



TIME

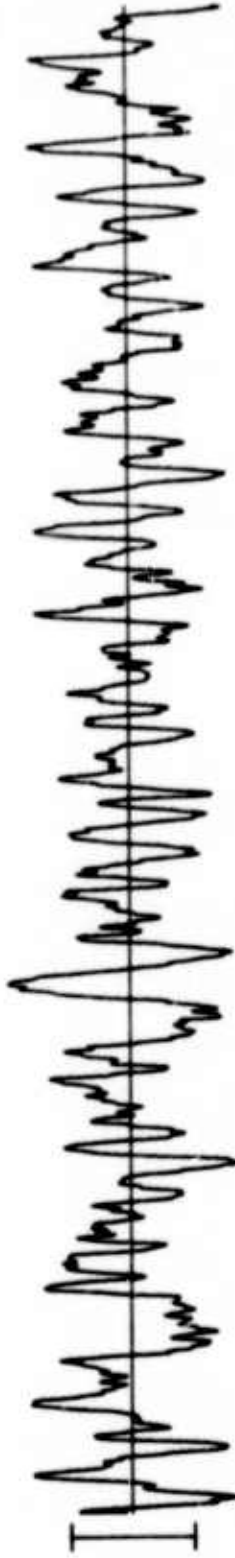


FN-WV 20 MAR 76

SPZ  
9.22 MU



SPR  
6.65 MU



SPT  
8.68 MU



TIME



CPS0 20 MAR 76

SPZ  
11.76 MU

0416566



SPR  
8.86 MU



SPT  
7.14 MU

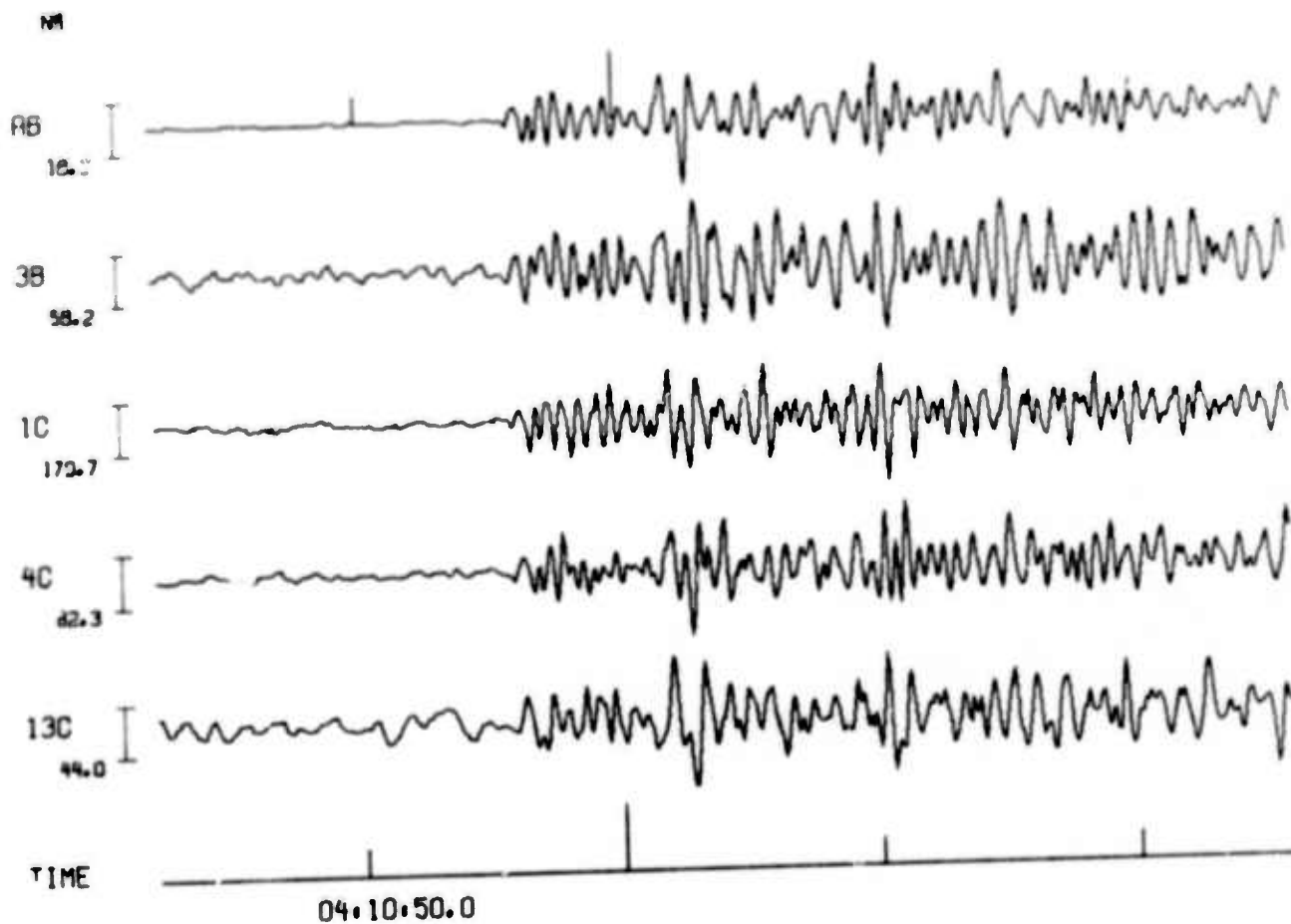


TIME



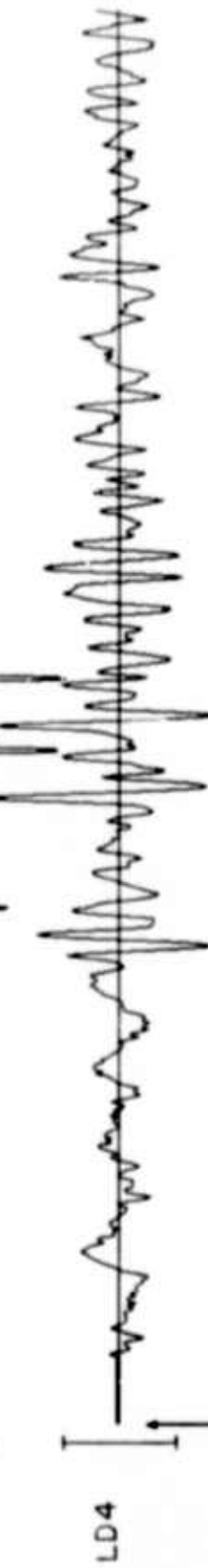


EPX 32460 NORSAR 20 MAR 1976  
ORIGIN 04.03.33 48.9N 78.9E 4.5 MB  
329 EASTERN KAZAKH SSR  
 $\Delta = 43.1$  BAZ = 78.0 C = 13.8 CM/SEC  
EXORS = 0



LASA INFINITE VELOCITY SUBARRAY SUMS 20 MAR 76

04:16:11.3



04:15:50

10 SEC

ALL SCALING FACTORS 21.15 MU.

WH2YK 20 MAR 76

LPZ  
159.83 MU



LPR  
197.29 MU



LPT  
184.20 MU

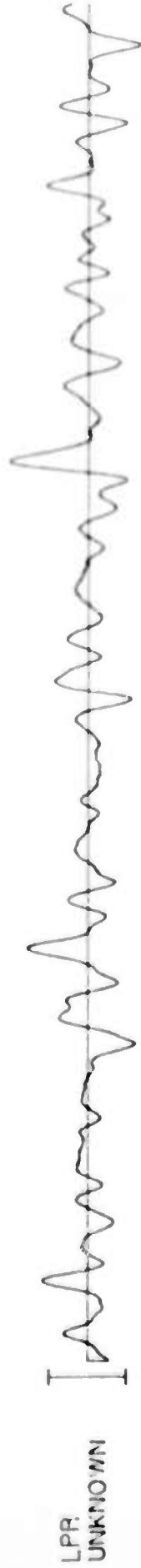
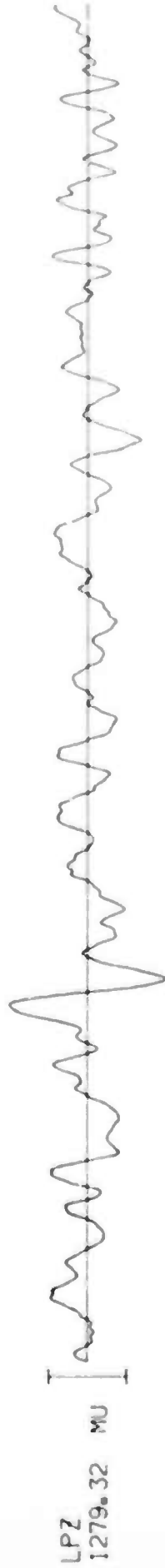


TIME



04:500

RK-ON 20 MAR 76



TIME





HN-ME 20 MAR 76

LPZ  
143.46 MU

04:54:20

LPR  
121.53 MU

LPT  
144.03 MU

TIME

2 MIN

04:50:00

FN-WV 20 MAR 76

05:00:19

LPZ  
88.49 MU



LPR  
230.95 MU



LPT  
208.16 MU



TIME



CPS0 20 MAR 76

LPZ  
123.15 MU

050217

LPR  
530.63 MU

LPT  
402.89 MU

TIME

2

050000